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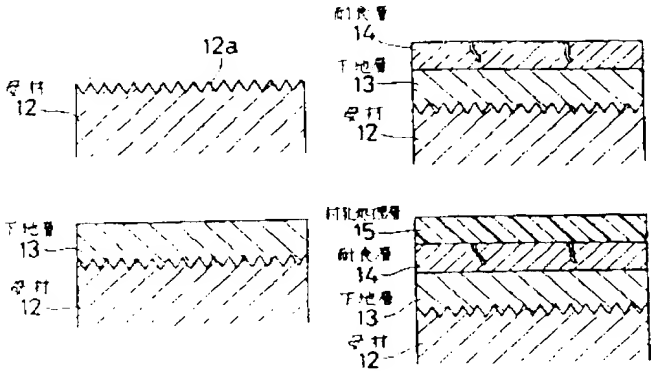
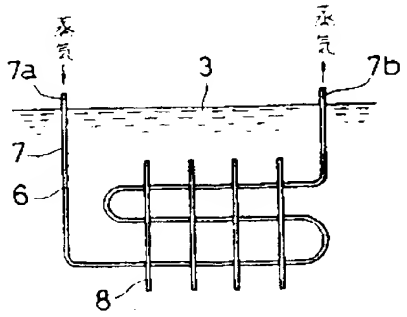
TITLE : TREATMENT OF HEAT TRANSFER SURFACE





ABSTRACT : PURPOSE: To remarkably improve the corrosion resistance of a heat transfer surface to a corrosive liq. by thermally spraying Ti, a Ti alloy, or TiO_2 separately or compositely onto the heat-transfer pipe for heating the corrosive liq.

CONSTITUTION: The heat exchanger 6 consisting of a heat-transfer pipe 7 and fins 8 is dipped in the highly corrosive liq. 3 such as the Ni plating Watts soln., and high-temp. steam is supplied from an inlet 7a to heat the liq. 3 and discharged from an outlet 7b. An inexpensive metallic base material 12 such as mild steel and stainless steel is used for the heat-transfer pipe 7, and the surface is blasted by a steel grid to form a fine-ruggedness surface 12a. The layer of an Ni-base alloy is formed thereon in about 80μm thickness as a substrate layer 13, and then Ti, a Ti alloy, or TiO_2 are thermally sprayed separately or compositely thereon in about 120μm thickness to form a corrosion-resistant layer 14. Finally, a sealing layer 15 consisting of a synthertic resin based on epoxy, urethane, 'Teflon(R)', silicone, etc., is formed on the surface of the corrosion-resistant layer 14 to seal the layer 14, and the heat-transfer pipe 7 having excellent corrosion resistance is produced.